

University of Dundee

Assessment of final year medical students in a simulated ward:

McIlwaine, Louisa M.; McAleer, J.P.G.; Ker, Jean S.

Published in:
International Journal of Clinical Skills

Publication date:
2007

Document Version
Publisher's PDF, also known as Version of record

[Link to publication in Discovery Research Portal](#)

Citation for published version (APA):
McIlwaine, L. M., McAleer, J. P. G., & Ker, J. S. (2007). Assessment of final year medical students in a simulated ward: developing content validity for an assessment instrument. *International Journal of Clinical Skills*, 1(1), 33-36.

General rights

Copyright and moral rights for the publications made accessible in Discovery Research Portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from Discovery Research Portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain.
- You may freely distribute the URL identifying the publication in the public portal.

Take down policy

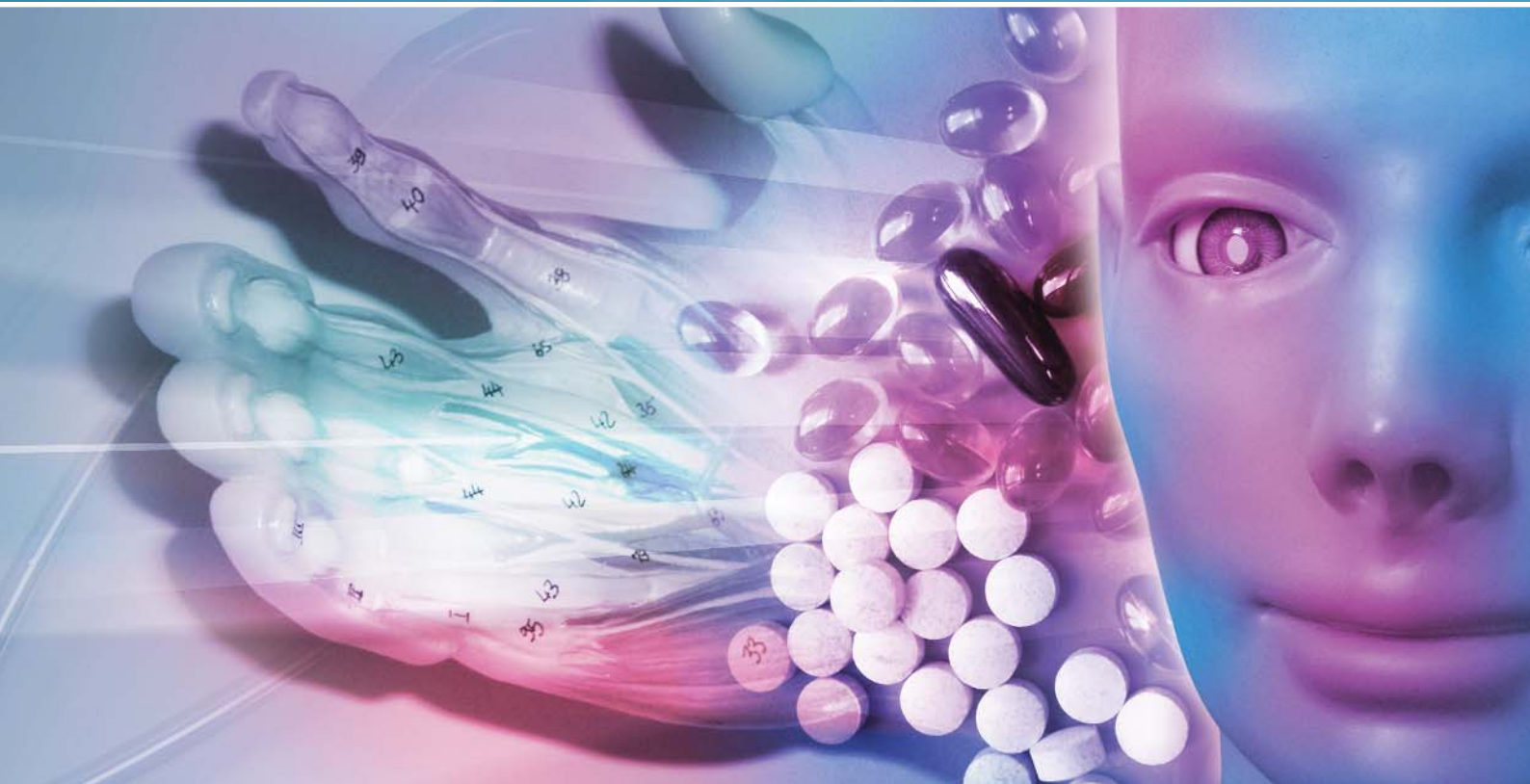
If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.



ISSN 1753-044X

Volume 1 Issue 1
September 2007

INTERNATIONAL JOURNAL OF CLINICAL SKILLS



A Peer Reviewed International Journal for the Advancement of Clinical Skills
– *'docendo ac discendo' – 'by teaching and learning'*



C.O.M.E.T. – A novel educational method in clinical skills

From simulation to reality

Shibboleths of incompetence

Development of a clinical skills bus: making simulation mobile

"See one, do one, teach one!" – the uphill struggle for clinical skills acquisition

Executive Board

Dr Humayun Ayub

Editor-in-Chief - editor@ijocs.org

Dr Alison Anderson

Executive Editor - a.anderson@ijocs.org

Mrs Sally Richardson

Senior Associate Editor - s.richardson@ijocs.org

Mr Keser Ayub

Managing Director - k.ayub@ijocs.org

Mr Kameron Khunkhune

Management Consultant - k.khunkhune@ijocs.org

Dr Mohammed Abu-Asi

Senior Clinical Skills Editor - m.abuasi@ijocs.org

Dr Raina Nazar

Clinical Skills Editor - r.nazar@ijocs.org

Miss Wing Mok

Business Development Manager & Associate Editor
- wing.mok@ijocs.org

Ms Hind Al Dhaheri

Associate Editor, United Arab Emirates (UAE)
- h.aldhaheri@ijocs.org



International Journal of Clinical Skills
P.O. Box 56395
London
SE1 2UZ
United Kingdom

E-mail: info@ijocs.org
Web: www.ijocs.org
Tel: +44 (0) 845 0920 114
Fax: +44 (0) 845 0920 115

Published by SkillsClinic Ltd.

Acknowledgements

I would like to take this opportunity to show appreciation to all those involved with the production of the International Journal of Clinical Skills. This has been a time consuming task but every minute of it has been worth it!

Special thanks goes to all members of the Editorial and Executive Boards, Nathaniel Coleman, Ziarat Khan, Federico Iannaci, Humayun Uddin, Vikram Raju, Amjad Anwar, Michael Todd, Mohammed Faraaz, all members of Amersham Vale GP practice, the 'Anderson' family, and last but not least the 'Ayub' family – all of whom have been extremely patient in the production of this ever lasting legacy. And not forgetting Kameron – it wouldn't have happened without you.

We would like to express our gratitude to all our UK based sponsors, including The Medical Defence Union (MDU), RCS Printers plc, Prudential Health Ltd, Limbs and Things, UK Haptics, DM Wood Medical, Professional Role Players Ltd, 360 Consulting Ltd and IT Solutions. We also thank Julian Beeton & Sally Cooke for their innovative design and creation, and the staff at HSBC Bank plc for their support.

The International Journal of Clinical Skills looks forward to contributing positively towards the training of all members of the healthcare profession.

Contents

The Executive Board Members	1
Acknowledgements	1
The Editorial Board	2
Mission Statement	2
Foreword	
– Professor The Lord McColl CBE	3

Editorials

Developing the continuum of clinical skills teaching and learning; from simulation to reality	
– Patsy Stark	4
Medico-legal consequences in surgery due to inadequate training in anatomy	
– Harold Ellis	8
Development of clinical skills bus: making simulation mobile	
– Maggie Nicol	10
Clinical communication: the emergence of a clinical discipline	
– Elaine Gill	14
See one, do one, teach one – the uphill struggle for clinical skills acquisition	
– Raina Nazar	17
Feedback to enhance student learning: facilitating interactive feedback on clinical skills	
– Faith Hill	21

Original Research

COMET: Clinically Observed Medical Education Tutorial – A novel educational method in clinical skills	
– Rajiv Nair	25
Preparing for practice – use of simulation to identify sub-optimal levels of care with junior medical students	
– Jean Ker	30
Assessment of final year medical students in a simulated ward: developing content validity for an assessment instrument	
– Louis McIlwaine	33
The use of medium fidelity simulation to develop technical and non-technical acute care skills early in the undergraduate curriculum	
– Lucy Ambrose	36
Reducing errors in laboratory test requests	
– Lysa Owen	38

Reviews

Shibboleths of incompetence	
– Dason Evans	41
Patient safety skills	
– Rick Johnson	43
Face to face: a training DVD-ROM to develop skills to diagnose patients presenting with mental health problems	
– Lisetta Lovett	47
Interview with Kuldip Birdi, author of 'Clinical Skills for OSCEs'	
– Wing Mok	49

Correspondence

51

Clinical Skills Notice Board

52

Editorial Board for the International Journal of Clinical Skills

Dr Ali H M Abdallah MB BS

Family Medicine
Dubai Health Authority (DHA)
United Arab Emirates (UAE)

Dr Khaled Al Beraiki MB BS

Forensic Medicine
Klinikum Der Universität zu Köln
Institut für Rechtsmedizin
University of Köln
Germany

**Mr Henry O Andrews FRCS(Eng) FRCS(Ire)
FRCS(Urol) FEBU MBA**

Consultant Urological & Laparoscopic Surgeon
Department of Urology
Milton Keynes General Hospital, (UK)

**Dr Peter J M Barton MB ChB FRCGP
DCH FHEA**

Director of Clinical and
Communication Skills
Medical faculty
University of Glasgow, UK

Dr Jonathan Bath MB BS BSc (Hons)

Department of Surgery
Johns Hopkins Hospital
Baltimore
United States America (USA)

**Professor Chris Butler BA MBChB DCH
FRCGP MD**

Professor of Primary Care Medicine
Head of Department of Primary Care and
Public Health
Cardiff University, UK

**Dr Aidan Byrne MSc MD MRCP
FRCa ILTM**

Director of Curriculum & Senior Lecturer in Medical
Education
School of Medicine
Swansea University, UK

Dr Dason E Evans MBBS, MHPE, FHEA

Lecturer in Medical Education and
Sexual Health
Barts and the London, Queen Mary's School of
Medicine and Dentistry
University of London, UK

**Miss Carol Fordham-Clarke BSc(Hons) RGN
Dip Nurse Ed**

Lecturer
Florence Nightingale School of Nursing
& Midwifery
King's College London, UK

**Dr Elaine Gill PhD BA (Hons) RHV RGN
Cert Couns**

Senior Lecturer in Clinical Communication.
The Chantler Clinical Skills Centre
Guy's, King's and St Thomas'
Medical School
King's College London, UK

**Dr Glenn H Griffin MSc Med MD FCFPC
FAAFP**

Family Physician Active Staff
Trenton Memorial Hospital
Trenton, Ontario
Canada

**Dr Adrian M Hastings MBChB
MRCP FHEA**

Senior Lecturer in Medical Education
Department of Medical and Social
Care Education
Leicester Medical School
University of Leicester, UK

Dr Faith Hill BA, PGCE, MA(Ed), PhD

Director of Medical Education Division
School of Medicine
University of Southampton, UK

**Dr Jean S Ker BSc (Med Sci) MB ChB
DRCOG MRCP MD Dundee FRCGP
FRCPE (Hon)**

Director of Clinical Skills Centre
University of Dundee Clinical Skills Centre
Ninewells Hospital & Medical School
University of Dundee, UK

**Dr Lisetta Lovett BSc DHMSA MBBS
FRCPsych**

Senior Lecturer and Consultant Psychiatrist
Clinical Education Centre
Keele Undergraduate Medical School
Keele University, UK

Miss Martina Mehning, Physician

Assistenzärztin Anästhesie
Marienkrankenhaus
Frankfurt
Germany

**Professor Maggie Nicol BSc (Hons) MSc
PGDipEd RGN**

Professor of Clinical Skills & CETL Director
City University London
St Bartholomew School of Nursing
& Midwifery, UK

**Dr Vinod Patel MB ChB, BSc (Hons), MD,
FRCP, DRCOG, MRCPGP**

Associate Professor in Clinical Skills
Institute of Clinical education
Warwick Medical School
University of Warwick, UK

Miss Anne Pegram SRN BSc (Hons) MPhil

Lecturer
Florence Nightingale School of Nursing
King's College London, UK

Dr Abdul Rashid MD (UKM)

Emergency Medicine
The National University of Malaysia Hospital (HUKM)
Kuala Lumpur
Malaysia

**Professor Trudie E Roberts BSc (Hons) MB
ChB, PhD, FRCP**

Head of the School of Medicine and Director of the
Medical Education Unit
University of Leeds, UK

Dr Robyn Saw FRACS MS

Surgeon
Sydney Melanoma Unit
Royal Prince Alfred Hospital
Australia

**Dr Mohamed Omar Sherif MBBS Dip Derm
MD (Derm)**

Specialist in Dermatology
Al Ain Hospital
Health Authority - Abu Dhabi
United Arab Emirates (UAE)

Professor John Spencer MB ChB FRCGP

School of Medical Education Development
The Medical School
University of Newcastle upon Tyne, UK

Dr Patsy A Stark BA (Hons) PhD RGN RM

Senior Lecturer in Medical Education
University of Sheffield, UK

**Professor Val Wass BSc MRCP FRCGP
MHPE PhD**

Professor of Community Based Medical Education
The University of Manchester, UK

Mission Statement

The clinical skills arena is an ever expanding field with an increasing wealth of knowledge; however there is no central resource for the sharing of evidence based research and information. The International Journal of Clinical Skills (IJOCS) is a peer reviewed International Journal, which will promote the sharing of information and evidence based research, as well as bringing together the clinical skills community.

The Journal aims to develop and maintain standards in research and practice, lay a platform for discussion and debate, and provide opportunity to present evidence based medicine and critical appraisal of research. Provision of this much needed resource for both students, teachers and healthcare professionals, will ultimately enhance patient care.

The IJOCS will be a regular publication, three times a year in the first instance, both online and in print. The implementation of the IJOCS website will provide a continual resource for daily use. Also, in conjunction with the 'Clinical Skills Lab', the IJOCS will allow access to an online database on over 200 clinical skills – launching in 2008.

A diverse range of reviewers support the Editorial Board, all of whom are leaders in their respective fields and the IJOCS prides itself on the quality of content. Contribution of original ideas, research, audit, policy, reviews, case reports and 'Letters to the Editor' are welcome from all those involved in this multidisciplinary field. Submissions are not limited to these specific publication types and your novel suggestions will be considered.

I wish to thank all those involved in the development of this unique venture – a Journal whose remit is highly significant to today's needs.

Dr Humayun Ayub

Editor-in-Chief

International Journal of Clinical Skills

Disclaimer & Information

Visit the International Journal of Clinical Skills (IJOCS) at www.ijocs.org

While effort has been made to ensure the accuracy of information within the IJOCS, no responsibility for damage, loss or injury whatsoever to any person acting or refraining from action as a result of information contained within the IJOCS (all formats), or associated publications (including letters, e-mails, supplements), can be accepted by those involved in its publication, including but not limited to contributors, authors, editors, managers, designers, publishers and illustrators.

Always follow the guidelines issued by the appropriate authorities in the country in which you are practicing and the manufacturers of specific products. Medical knowledge is constantly changing and whilst the authors have ensured that all advice, recipes, formulas, instructions, applications, dosages and practices are based on current indications, there may be specific differences between communities. The IJOCS advises readers to confirm the information, especially with regard to drug usage, with current standards of practice.

International Journal of Clinical Skills (IJOCS) and associated artwork are registered trademarks of the Journal. IJOCS is registered with the British Library, print ISSN 1753-0431 & online ISSN 1753-044X. No part of IJOCS, or its additional publications, may be reproduced or transmitted, in any form or by any means, without permission. The International Journal of Clinical Skills thanks you for your co-operation.

The International Journal of Clinical Skills (IJOCS) is a trading name of SkillsClinic Limited a Company registered in England & Wales. Company Registration No. 6310040. Journal printed on paper as defined by ISO 9706 standard, acid free paper.

© International Journal of Clinical Skills

Foreword

International Journal of Clinical Skills **– An exciting forum for clinical skills**

There has been an explosion in the volume of medical information related to clinical skills, which are essential in our efforts to maintain optimal patient care. The International Journal of Clinical Skills (IJOCS) aims to disseminate this knowledge in an easily accessible form. This will not only enhance our attempts to provide a quality health service, possibly with some standardisation, but also provide a vehicle for teaching and learning, hence the Journal's motto – 'docendo ac discendo' (by teaching and by learning).

The IJOCS will not only serve as an avenue for publication of research papers, but will also act as a means of communication between clinical skills professionals at an international level. Consequently, those involved in the clinical skills field, can keep those in other countries informed of their activities, as well as offering best practice guidance.

Alongside this valuable publication, a continually evolving online database ('Clinical Skills Lab') will become available for students and teachers to access – this will hold extensive information on over 200 clinical skills. The Clinical Skills Lab will be regularly updated by all those involved in this field and provide a platform for discussion and debate.

The IJOCS also aims to present comment on items of specialist interest. For example, the current issue contains a paper by Professor Harold Ellis CBE, on 'Medico-legal consequences in surgery due to inadequate training in anatomy', and explores the potential niche for anatomical clinical skills training within the newly developed medical Foundation Years (F1 & F2). It is hoped readers will make use of the Journal to comment on matters such as this – and on others relating to the subject of clinical skills – by means of 'Letters to the Editor', research based evidence and shared practice.

In order for IJOCS to become an exciting forum for clinical skills, the Journal welcomes submission of innovative research, papers, reviews and case reports. Of course, submissions are not only limited to these specific publication types and your innovative ideas would be greatly welcome by the Editor.

I am confident that IJOCS will be appreciated by a variety of health care professionals, at an international level. It promises to be representative of an ever expanding field, and with the support of all those able to contribute, it will, without doubt become increasingly influential.

I wish those responsible for the production of the International Journal of Clinical Skills, the success which their initiative deserves.



Professor The Lord McColl of Dulwich CBE
September 2007

Assessment of final year medical students in a simulated ward: developing content validity for an assessment instrument

Dr Louisa M. McIlwaine MB ChB, MRCP, DipRCPPath
Clinical Lecturer
University of Dundee

Dr J.P.G. McAleer
Senior Lecturer
Centre for Medical Education
Tay Park House
Dundee
DD2 1LR

Dr Jean. S. Ker BSc, MD, FRCGP, FRCPE
Director of Clinical Skills
University of Dundee

Corresponding author:
Dr Louisa M. McIlwaine
Clinical Lecturer
University of Dundee
Clinical Skills Centre
Dundee DD1 9SY
Email l.m.mcilwaine@dundee.ac.uk
Tel +44 1382 633937
Fax +44 1382 633950

KEYWORDS:
Simulated ward
Validity
Assessment
Clinical skills
Delphi method
Medical student

Introduction

Despite changes in undergraduate curricula and assessment, the United Kingdom is still graduating medical students who are 'unfit for practice' in their pre-registration year¹ suggesting that there is a failure in identifying them at undergraduate level. Whilst work place based assessment is the most authentic method of testing performance, the tools available are limited to postgraduate assessment^{2,3}. At undergraduate level, Objective Structured Clinical Examinations (OSCEs) are currently the mainstay of sampling different competencies⁴. The OSCE has a standardised format, is reliable, reproducible and feasible⁵ but can only demonstrate the examination or management of one patient at any one time. None of the postgraduate or undergraduate instruments currently assess a candidate's ability to perform in a pressurised ward environment, when caring for more than one patient simultaneously.

Simulation has been successfully used to provide a safe, realistic, learner-centred health care context.^{6,7} Within the Clinical Skills Centre in Dundee we have developed a simulated ward to reflect a real ward environment and provide an opportunity to observe how a student would perform when responsible for the care of several patients simultaneously. It has been evaluated positively by pre-registration house officers⁸ previously and anecdotally reported by consultant physicians as replicating how junior doctors perform on the real ward. At present, the simulated ward is used as a learning environment but has the potential to be developed for use in assessment to highlight the students that need more support prior to graduation. We have developed a standardised simulated ward exercise using simulated patients and a medium fidelity simulator where the final year medical student is given a handover and asked to manage the patient for the next 25 minutes as if they were the Foundation Year 1 doctor. The simulation is videoed for review and feedback. This exercise provides an opportunity to assess the students individually on their performance representing the 'does' in the top tier for Miller's pyramid⁹.

Van der Vleuten has described the five criteria for an assessment tool¹⁰, one of which is validity. An assessment tool can only be valid if the items against which a student is assessed are themselves valid. This paper describes the items and how they were derived.

Methodology

A Modified Delphi Method was used to develop valid criteria for the assessment instrument for the simulated ward exercise. There are many descriptions of the Delphi Method and its modifications¹¹. The method used in this study is shown in Figure 1.

Initial Generation of List of Items

For this item determination study, expert opinion was initially harnessed through the formation of an expert group.

An expert was defined as a professional with

1. Up to date knowledge of the requirements of a final year medical student
2. Up to date knowledge of the requirements of a junior doctor on a medical ward (both of the GMC requirements and the day to day role)
3. An awareness of the ward simulation exercise.

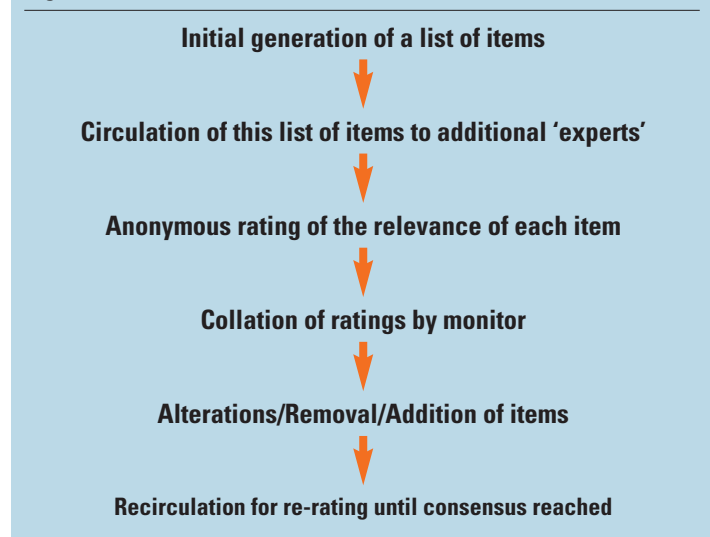
The importance however, of generating 'correct' items is so fundamental to the assessment process that the suggestions from the expert group were further validated by additional experts.

The members of the expert group were asked to define the required

Abstract

Performance assessment is becoming increasingly important in both undergraduate and postgraduate assessment. At present, the tools used to assess a medical student's performance evaluate only their care for one patient at a time. The development of the simulated ward has provided an opportunity to assess how a final year medical student would perform caring for a variety of patients simultaneously in a realistic ward environment, without risk to patients. This paper describes the development of valid assessment criteria using a modified Delphi method.

Fig 1



attributes of a junior doctor that could be demonstrated in the ward simulation exercise. Each item had to be singular, so that the student either did, or did not fulfill the criteria. The experts were circulated electronic and paper versions of the questionnaire to improve response rate.

The items generated were collated into manageable groups by the monitor and one member of the expert group.

Circulation of Items to Additional Experts

The additional experts were asked to rate the items for assessment in the ward simulation exercise against the following scale.

1. Not relevant
2. Unable to assess relevance without item revision or item in need of such revision that it would not longer be relevant
3. Relevant but needs minor alteration
4. Very relevant and succinct.

Comments were invited on individual or additional items. The individual ratings were collated by the monitor. The monitor was unconnected to either group of experts, to reduce the risk of bias. Items were altered as appropriate, and recirculated until consensus was reached. The cut-off was chosen prior to commencement of the study as 80% of responders rating the item '3' or '4'. Items achieving less than this were removed.

Results

Expert Group: The initial expert group comprised 4 senior health care professionals experienced in medical education. 36 items were generated by the expert group.

Second Expert Group: This group comprised experts with the same criteria as the first group, but who had not originally been involved. There were 10 who received the questionnaire representing a broad area of expertise in general practice and hospital medicine. All members of the expert group had a significant involvement in the assessment of undergraduate medical students in their senior years.

9 (90%) responded. After 2 rounds, all items received a rating of 3 or 4 from ≥80% of the clinicians asked (≥89% of those who responded). The items are shown in Table 1.

Table 1. Modified Delphi Result

General
1. The doctor forms an initial overview of the ward using all information available
2. The doctor prioritises appropriately
3. The doctor performs all essential tasks
4. The doctor gives clear and concise handover at the end
Clinical Skills
5. The doctor takes an effective history
6. The doctor examines appropriately
7. The doctor performs clinical procedures competently
8. The doctor initiates appropriate investigations
9. The doctor demonstrates competency in interpreting results
10. The doctor makes informed decisions using appropriate information
Critically Ill Patient
11. The doctor recognises that the patient is sick
12. The doctor makes an appropriate assessment of the critically ill patient
13. The doctor resuscitates the critically ill patient appropriately
14. The doctor manages the emergency within an appropriate timeframe
15. The doctor seeks help appropriately
Prescribing/written documentation
16. The doctor prescribes safely
17. The doctor prescribes appropriately
18. The doctor records appropriately in notes
19. The doctor completes written tasks appropriately
20. The doctor recognises mistakes/errors
Response to interruptions
21. The doctor responds appropriately to timed interruptions
22. The doctor follows up timed interruptions appropriately
23. The doctor reacts appropriately to nursing observations
Communication
24. The doctor gives clear instructions
25. The doctor demonstrates appropriate listening skills
26. The doctor communicates appropriately with team members
27. The doctor works well with nursing colleague.
28. The doctor communicates appropriately with patients or relatives
29. The doctor has appropriate language skills
30. The doctor treats patient with appropriate respect
31. The doctor respects the patient's privacy
32. The doctor respects the patient's confidentiality
Health and Safety
33. The doctor demonstrates safe practice
34. The doctor takes sufficient care to prevent cross-infection
35. The doctor demonstrates good handwashing procedures
36. The doctor demonstrates insight into errors.

The second group of experts expressed potential difficulty with the terms "appropriate", "essential", "competently" and "sufficient", but agreed that clarification with the examiners prior to any assessment would minimise this.

One addition was suggested by the members of the expert panel of "The doctor adhered to appropriate local prescribing guideline". It was agreed that this item should be included under Item 17 "the doctor prescribes appropriately". No other items were added.

Discussion

This study has produced 36 items for development of the assessment tool for use in a simulated ward environment. Whilst it could be argued that these items are “expert opinion rather than indisputable fact”,¹² they represent a consensus of opinion of a body of experts. This consensus has been derived by a process recognised as acceptable worldwide when accurate, precise information is unavailable. The experts were drawn from those professionals involved across the fields of undergraduate and postgraduate medical education. This group was limited however, to those who had experience of the ward simulation exercise. Patients and other lay people were not included as it was felt that they were not sufficiently expert in any of the areas.

Within the health care environment, the consensus building enabled by the Delphi Method has been used widely. It has led to national curriculum development in a variety of areas^{13,14,15} and has been used in the development of assessments using simulation¹⁶.

The anonymous nature of the questionnaire is designed to encourage the contributor to ‘voice’ their opinion, something which they may be reluctant to do in the context of a face to face group meeting. However, McKenna’s description is perhaps more accurate of the ‘quasi-anonymity’ of this stage, as the monitor is aware of the identity of the individual responder¹⁷.

The monitor and one of the members of the expert group did collate the items under domain headings. This has the potential to cause bias in the marking of the questionnaire by the experts, as it may produce a ‘halo effect’¹⁸. It is difficult to assess this, and there are indeed two domains which score a ‘4’ throughout by all responders. (The critically ill patient, Prescribing/written documentation). In contrast however, the items scoring ‘3’ are well distributed across the other domains and the 4 scores of ‘2’ occur in four separate domains, suggesting that these respondents were not affected by the grouping.

There appears to be very clear consensus in the items, and while this is encouraging, it perhaps suggests that the initial expert group were too restrictive with their items, and could have suggested more. In an attempt to counterbalance this suggestion however, it must be pointed out that each member of the second expert group receiving the questionnaire was given a blank space on the form to add any suggestions and only added one, perhaps confirming that the initial expert panel identified all the possible items. The return rate of 90% suggests keen participation in the study by this second expert group rather than disinterest in the items.

Some concern was expressed by the participants over the wording of the items, in particular those using “appropriate”, “essential”, “competently” and “sufficient” but it has been agreed that these are important concepts in the ethos of the ward simulation exercise, where there is not only one ‘correct way’. Future studies will be required to determine whether these concerns are justified, and could be dealt with training and explanation of the items to the examiners before marking the students. This tool will have a subjective element but is intended to be used by clinicians used to making expert judgments.

Conclusion

This study has generated a set of items (criteria) for a new assessment in the simulated ward environment. These have been derived by consensus of practicing clinicians using a validated Delphi method ensuring validity of the items. The simulated ward exercise is not designed as a panacea for undergraduate assessment, but to provide a safe, realistic environment in

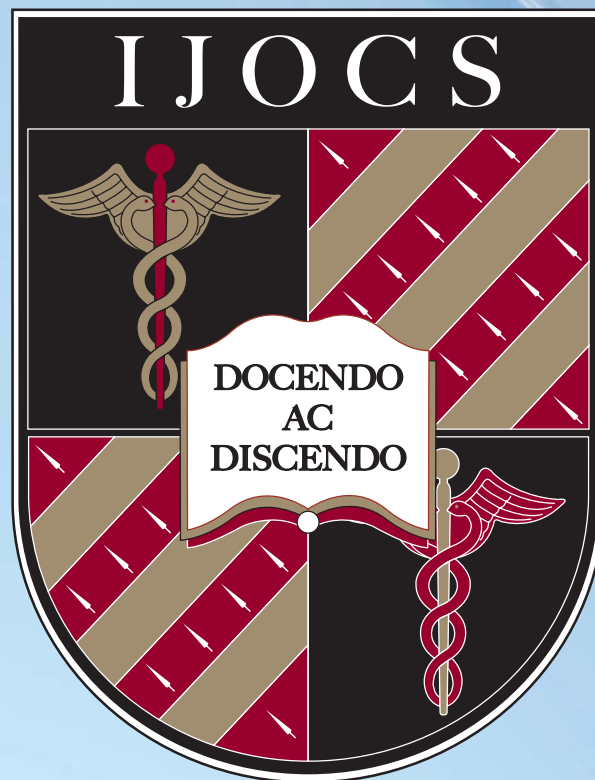
which to assess senior medical students. The description of the items and the method of their derivation should ensure transferability of the assessment to other institutions. Further validation of the simulated ward environment as an assessment tool is underway. ■

References

1. Bovill I P. The new undergraduate curriculum: are PRHOs equipped to do the job? *Clin Med JRCPL* 2002;**2**:480-1
2. Norcini J.J., Blank L.L., Duffy F.D. and Fortna G.S The mini-CEX: a method for assessing clinical skills. *Annals of Internal Medicine* 2003;**138**(6): 476-81
3. Garman A.N. Tyler J.L. and Darnall J.S. Development and validation of the 360-degree-feedback instrument for healthcare administrators. *Journal of Health Care Management*. 2004;**49**(5):307-21
4. Harden R.M. and Gleeson F.A. Assessment of clinical competence using an objective structured clinical examination (OSCE). *Medical Education*. 1979;**13**(1):41-54
5. Epstein R.M., Assessment in Medical Education. *N Engl.J.Med.* 2007;**356**:387-96
6. Bradley P. The history of simulation in medical education and possible future directions *Med Educ* 2006; **40**:254-262
7. Gaba D.M. and DeAnda A. A comprehensive anaesthesia simulations environment: recreating the operating room for research and training. *Anesthesiology* 1988;**69**:387-94
8. Ker J.S., Hesketh E.A., Anderson F., Johnston D.A. Can a ward simulation exercise achieve the realism that reflects the complexity of everyday practice junior doctors encounter? *Medical Teacher* 2006;**28**:330-334
9. Miller GE. The assessment of clinical skills/competence/performance. *Acad Med* 1990;**S63-7**
10. Van der Vleuten C.P.M. The Assessment of Professional Competence: Developments, Research and Practical Implications. *Advances in Health Sciences Education* 1996 **1**:41-67
11. Linstone H, Turoff M (eds) *The Delphi Method: Techniques and Applications*. (1975) Addison-Wesley, Reading, MA.
12. Powell C. The Delphi Technique: myths and realities *Journal of Advanced Nursing* 2002;**41**(4):376-382
13. Turner G.H., Weiner D.K. Essential Components of a Medical Student Curriculum on Chronic Pain Management in Older Adults: Results of a Modified Delphi Process. *Pain Medicine* 2002;**3**(3):240-252
14. Kilroy D, Driscoll P. Determination of required anatomical knowledge for clinical practice in emergency medicine: national curriculum planning using a modified Delphi technique. *Emergency Medicine Journal* 2006; **23**(9):693-696
15. Clayton R. Perera, R. Burge, S. Defining the dermatological content of the undergraduate medical curriculum: a modified Delphi study. *British Journal of Dermatology*. 2006; **155**(1):137-144
16. Scavone, B. M. Sproviero, M. T. McCarthy, R. J. Wong, C.A. Sullivan, J. T. Siddall, Viva J, Wade, L D. Development of an Objective Scoring System for Measurement of Resident Performance on the Human Patient Simulator. *Anesthesiology* 2006; **105**(2):260-266,
17. McKenna H. The Delphi Technique: a worthwhile approach to nursing? *Journal of Advanced Nursing* 1994;**19**:1221-1225
18. Mead D, Moseley, L. The use of the Delphi as a research approach. *Nurse Researcher* 2001;**8**(4):4-23.

Register at www.ijocs.org to receive a
FREE copy of Issue 2 of the

INTERNATIONAL JOURNAL OF CLINICAL SKILLS



If you wish to submit material for
publication, please email info@ijocs.org



Clinical Skills Lab (CSL)



The Clinical Skills Lab database will comprise information on over 200 clinical skills, broadly separated into:

- History taking skills
- Communication skills
- Clinical examination/interpretation skills
- Practical skills

Not only will this valuable resource provide material to students as a learning tool and revision aid, for example, OSCEs, it will also offer educational materials for teachers from all disciplines, allowing some standardisation of practice. The Clinical Skills community will also be encouraged to contribute, making this database interactive.

CSL is Launching in April 2008 – view sample material at **www.ijocs.org** and take advantage of a 50% discounted rate if booked prior to **1st March 2008** (enter promotional code **CSL63R** at registration)